



Dr. Ellen Vincent 



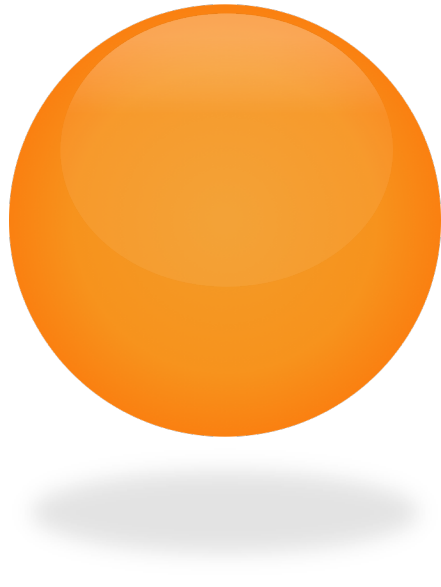
# Creating and Using Interdisciplinary Teams for Engaged Critical Thinkers in the College Classroom



Graduate Student Teaching Institute  
December 20, 2019

# Group work & Critical thinking

Group Work Problem	Solution
Students claim others don't contribute.	Conduct group work (not assignments) <b>in</b> class.
Some students feel they need to do all the work to ensure they will attain a high grade.	Offer <b>professional communication strategies</b> for them to try out in small groups in class.
Critical Thinking Problem	Solution
Definitions unclear	Provide multiple definitions: <b>historic and contemporary</b> ; introduce <b>real people</b> ; <b>embrace messiness</b>
Remote relevancy	Use <b>subject specific</b> problems and outcomes; relate to <b>vocation</b> problem solving

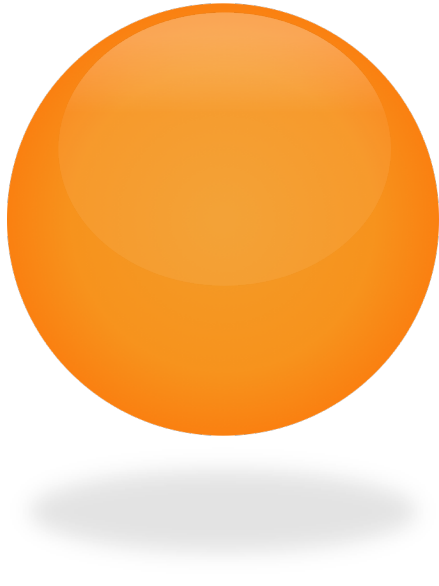


# **CRITICAL THINKING IS AN ANCIENT RICH CONCEPT**

The practice and concepts are 2500 years old.

<http://criticalthinking.org/pages/defining-criticalthinking/766>

# HISTORY



IT CAN BE TRACED IN THE WEST TO ANCIENT GREECE WITH ITS SOCRATIC METHOD AND IN THE EAST TO ANCIENT INDIA WITH THE BUDDHIST KALAMA SUTTA AND ABHIDHARMA LITERATURE.

<http://openmindspace.org/CriticalThinking>

# Socrates

- Socrates 469–399 B.C.E., lived in Athens, Greece
- He never wrote anything. But Plato did.
- He was ugly, really ugly.
- He liked to talk and ask questions.
- He acknowledged women as teachers.
- Young people started to ask questions too.
- He was sentenced to death for *irreverence* to the gods and killed by drinking hemlock (*Conium maculatum*).



# Socratic method

- Father of philosophy.
- **Questions** were asked to determine logic, ethics, fairness, and constancy.
- Inspired the scientific method (develop a hypothesis and then investigate validity.)



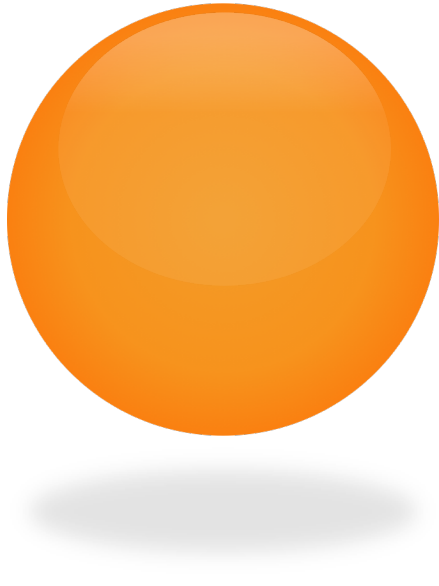
Sculpture by Constantin Brancusi

<http://en.wikipedia.org/wiki/Socrates>

<https://plato.stanford.edu/entries/socrates/>

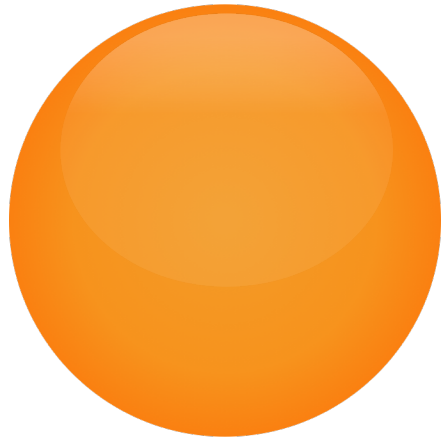
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# Socratic principle--Linda Elder



**THEY EMBODY THE SOCRATIC PRINCIPLE: *THE UNEXAMINED LIFE IS NOT WORTH LIVING*, BECAUSE THEY REALIZE THAT MANY UNEXAMINED LIVES TOGETHER RESULT IN AN UNCRITICAL, UNJUST, DANGEROUS WORLD.** (ELDER BIOGRAPHY)

<http://www.criticalthinking.org/data/pages/14/fd4e6f74cc717ed36a9faccc870b8a2e4fe0bd688b279.pdf>



# **CRITICAL THINKING IS AN INTELLECTUALLY DISCIPLINED PROCESS**

<http://criticalthinking.org/pages/defining-criticalthinking/766>



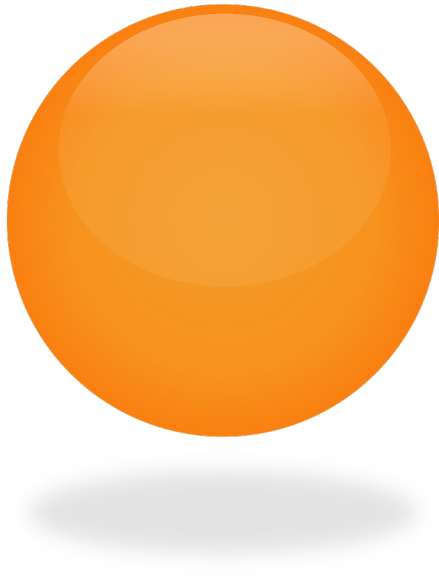
# Critical thinking

- Critical thinking happens when we think about how we think... we track our own thoughts and decision making processes (Vincent, 2013).
- Critical thinking...the awakening of the intellect to the study of itself (Scriven & Paul, 1987 from the Foundation for Critical Thinking Defining Critical Thinking at <http://www.criticalthinking.org> ).



<http://sandykumskov.com/images/think.jpg>

# Critical thinking - Richard Paul



**WE QUESTION OUR OWN PURPOSES,  
EVIDENCE, CONCLUSIONS,  
IMPLICATIONS AND POINT OF VIEW  
WITH THE SAME VIGOR AS WE  
QUESTION THOSE OF OTHERS.**

(PAUL BIOGRAPHY BY ELDER)

<http://www.criticalthinking.org/data/pages/37/ff640b6d016307b54cad91e5a9d4edfd4f18adb74215a.pdf>  
<http://www.criticalthinking.org/data/pages/14/fd4e6f74cc717ed36a9facc870b8a2e4fe0bd688b279.pdf>

# Critical thinking intellectual traits

- Intellectual humility
- Intellectual autonomy
- Intellectual integrity
- Intellectual courage
- **Intellectual empathy**
- Intellectual perseverance
- Confidence in reason
- **Fairmindedness**

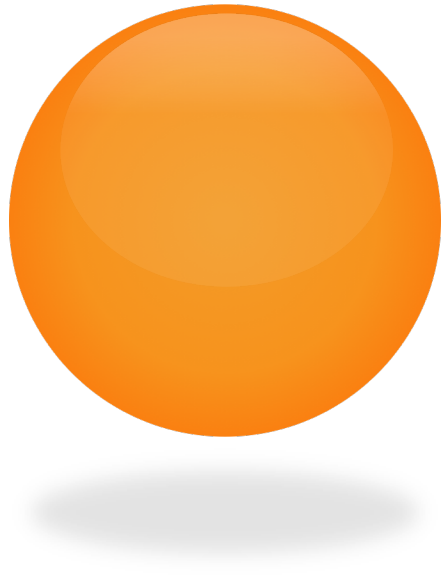


<https://www.pinterest.com/pin/322148179572194734/>

The Foundation for Critical Thinking

<http://www.criticalthinking.org/pages/critical-thinking-where-to-begin/796>





# **WHY USE INTERDISCIPLINARY WORK GROUPS IN THE CLASSROOM?**

To contribute to positive solutions in the workplace and world

# Sustainability defined



Gro Harlan Brundtland, Chair of World Commission; Former Prime Minister of Norway

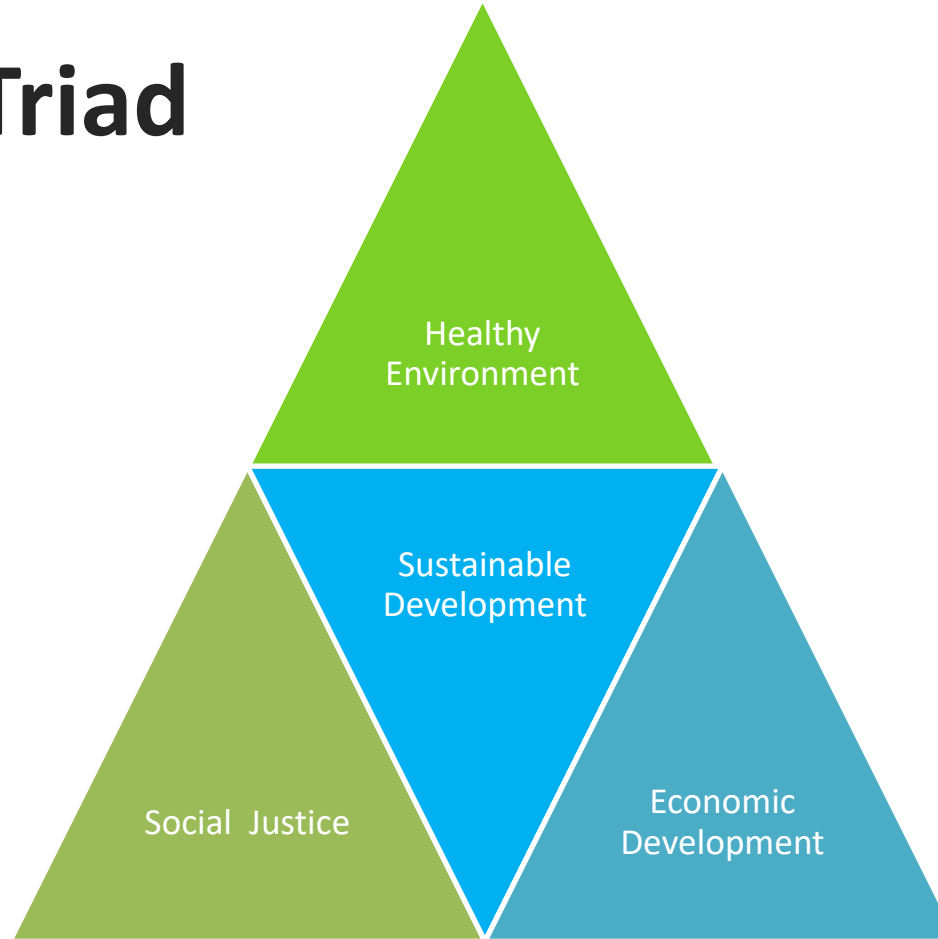
<https://www.britannica.com/topic/Brundtland-Report>

[https://en.wikipedia.org/wiki/Our\\_Common\\_Future#/media/File:Our\\_Common\\_Future\\_book\\_cover.jpg](https://en.wikipedia.org/wiki/Our_Common_Future#/media/File:Our_Common_Future_book_cover.jpg)

12/18/19

# Sustainable Development

## Issue Triad



*“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (1987, p. 8).*

Issue triad created by E. Vincent using *Our common future* (1987) pp.37-38  
The World Commission on Environment and Development (1987). *Our Common Future*. Oxford:  
Oxford University Press

# Shared leadership

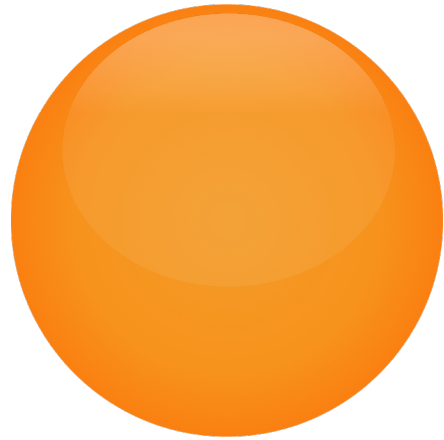
Nelson  
Mandela  
convenes  
The  
Elders in  
2007  
(July 18)



[http://desertpeace.files.wordpress.com/2009/09/the\\_elders.jpg](http://desertpeace.files.wordpress.com/2009/09/the_elders.jpg)

<https://theelders.org/nelson-mandela>





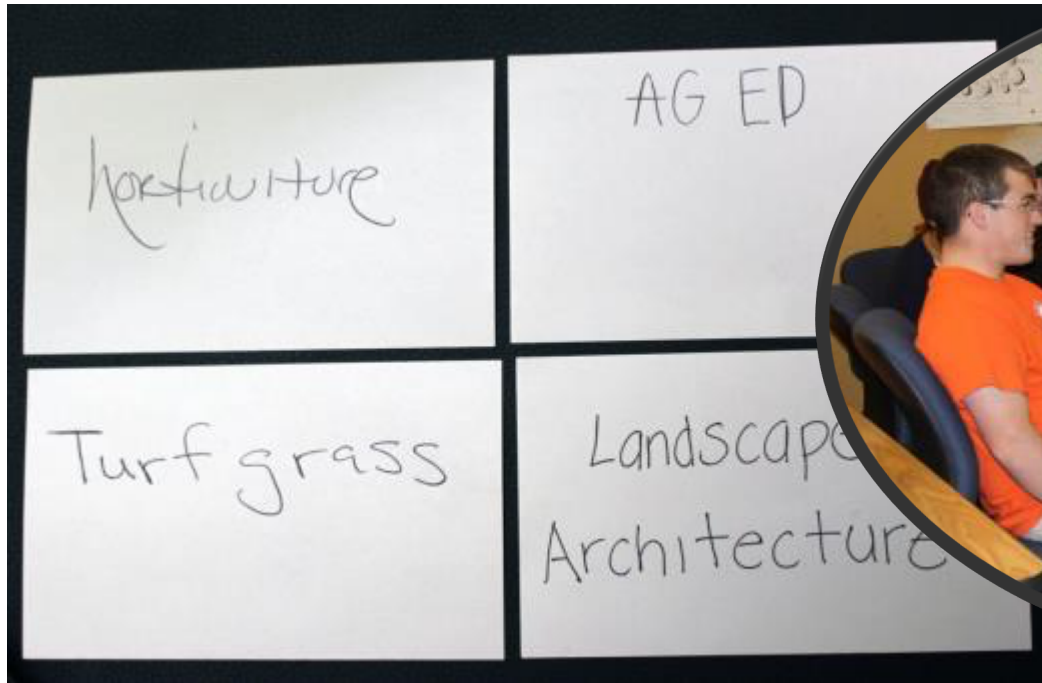
# **CREATING INTERDISCIPLINARY TEAMS IN THE CLASSROOM**

Fair, random



# Tool: Form mixed major teams

- ***Form interdisciplinary teams by mixing majors***
  - *Sort by major, shuffle cards, student rep from various majors select cards for team in full view, no personal names visible*



# Tool: Group exercises

- *Provide clipboards and worksheets to professionalize the experience*
- *Worksheets contain space for name and major*



# Tool: Group exercises

## Group exercise: Sustainable Communications | HORT

Name	Major
1 Brittany Lapple	Architecture
2 Rachel Edwards	Hort
3 Jay Gervais	Civil Engineering
4 Austin Allen	LAHC

State a claim (clear and obvious) made by authors (like a hypothesis) about engagement and/or dialogue:

In order for a group to be successful<sup>in a dialogue setting</sup> every member must be included and energetically engaged, through maintenance and facilitation

Validity checks (search for truth) using three methods/sources:

1-Experiential (personal or others)

Multi- or interdisciplinary work with conflicting or multiple opinions. (e.g. lab work, architecture projects)

2-Authoritative (professors, .gov; .edu; non-profit organizations)

A contractor who has to deal with ... help

**2-Authoritative** (professors, .gov; .edu; non-profit organizations)

A contractor who has to deal with and help converge ideas from a number of different professions on a daily basis.

**3-Disciplined** (peer reviewed lit, published surveys and experiments)

Published peer reviewed article on the subject of communication and engagement.

**Alternate views/perspectives**

Identify people or organizations who may disagree with the claim.

State the source of the view.

- A CEO who wants to have the final say on decisions, despite other opinions
- Control oriented people in positions of power
- A tenured professor who doesn't have Intellectual humility

# HORT 3080 Group exercise: Sustainable Garden | CT2

Name	Major	Name	Major
1 Laurence Gressette	LA	3 Raye A.	<del>EA</del> Hort
2 Austin Allen	LA	4 Anna Fisher	Hort

## Viewpoint from your discipline

Beliefs/claims (clear and obvious) of authors (like a hypothesis):

Be mindful of design process in working with other disciplines.

Methods/sources for checking validity

Experiential (personal or others):

How we feel and know about the claim through our own LA and design experience.

Authoritative (professors, .gov; .edu; non-profit organizations):

Ask professors about personal experience working w. collaboration / local consultants / viewpoints from <sup>college</sup> books

Disciplined (peer reviewed lit, published surveys and experiments):

Clemson extension for published surveys.

ASK professors about personal experience working w  
collaboration / local consultants / viewpoints from books college

Disciplined (peer reviewed lit, published surveys and experiments):

Clemson extension for published surveys.

**Multiple views:** Perspectives (your own or imagined others) that do not support your claim. State the source of the view.

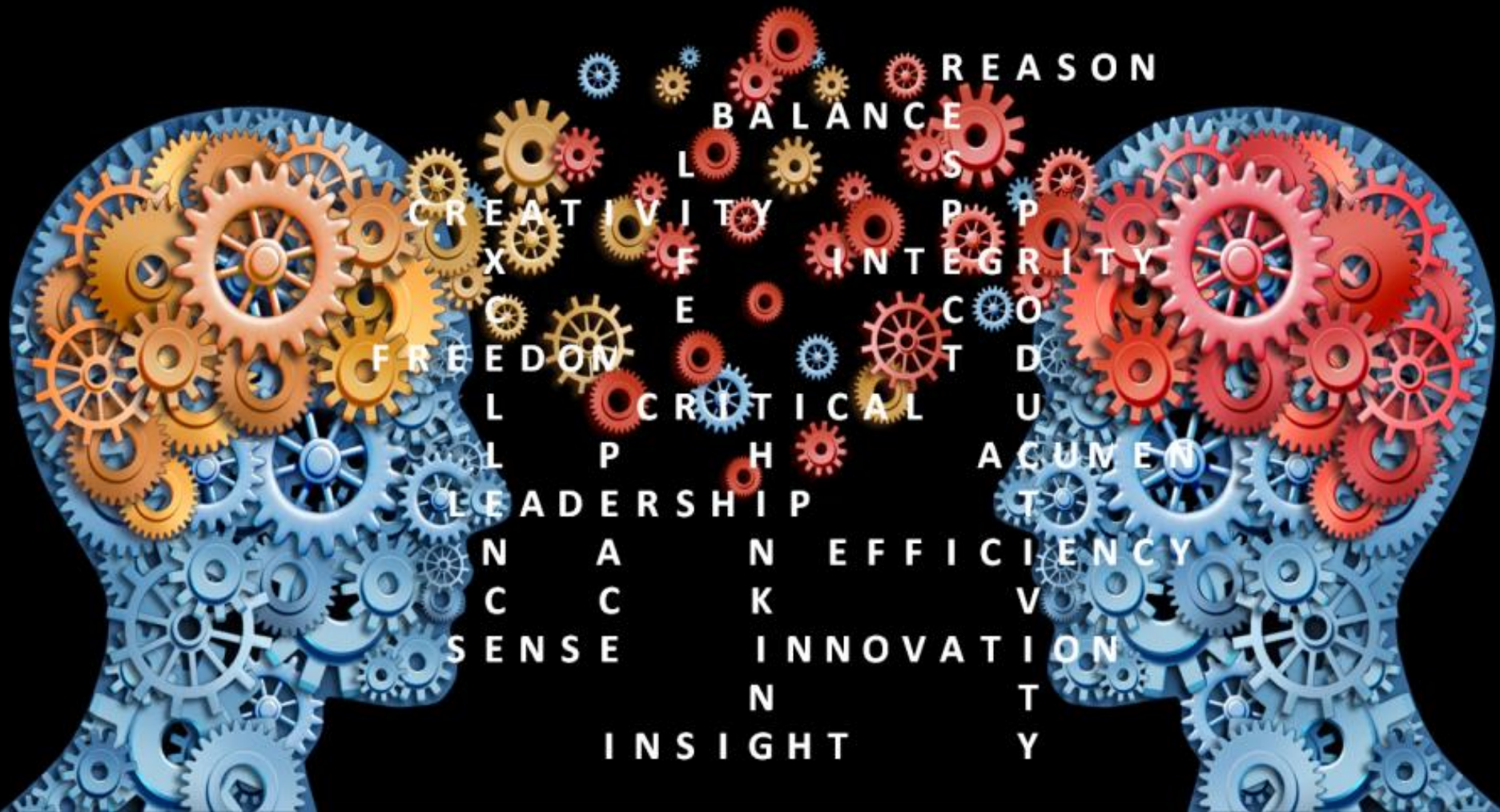


Prestigious design artists in different states or countries.

-they have been so highly regarded, they have "faith" in their design and don't plan to look and listen to outside sources.

*Use reverse side if needed*







# Critical Thinking Visual Essay Items

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1. Identify a claim/belief/assumption from the readings or class that you personally connect with.
2. Investigate the validity of the claim/belief/assumption.
3. Explore or look at the issue using multiple viewpoints.
4. Reflect from your past and tell the story.
5. Conclude with personal *informed* actions.
6. Add an image that supports your search.
7. Cite the image.



# Sustainable Landscape Garden Design, Installation, & Maintenance HORT 3080

**HORT  
CT<sup>2</sup>**

## Critical Thinking Protocol in Visual Essay

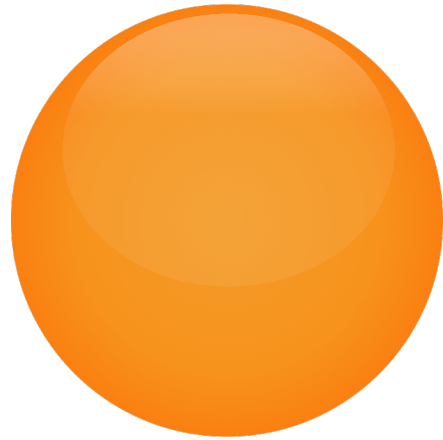
Grading rubric: 100 points total

Each essay should contain a header that includes: Name; Class title; Date; CT2 Visual Essay

Save the essay with your last name and the essay # in the saved file name: e.g. Vincent\_CT2 essay1

Critical Thinking Essay Item	Points
<b>Identify a claim/belief/assumption from class or readings that you personally connect with:</b>  Identify and clearly state a specific claim/belief/assumption that you perceive. Include the source(s) you are using in the text. Do not use quotes-use your own words.	10
<b>Investigate the validity of the claim/belief/ assumption:</b>  How can you check the author's claim/belief/assumption for accuracy and validity? Be specific and use a <b>minimum of two methods</b> to determine the legitimacy of the author's claims.  <b>Experiential</b> (personal experience); <b>authoritative</b> voices (professors, .gov, .edu sites); <b>disciplined</b> (peer reviewed literature; surveys; fact checks; repetition of experiments, etc.)	20
<b>Explore alternate possibilities/conclusions using multiple viewpoints:</b>  What other possible perspectives, explanations, or interpretations can you suggest for a deeper understanding of the claim/belief/assumption? State the source of the view.	10
<b>Reflection from your past:</b>  Using your own personal experiences share a story from your past that was triggered by the claim/belief/assumption. Make it vivid so the reader feels as though they were there with you.	10





# **INTERDISCIPLINARY COMMUNICATION TOOLS**

Engagement, dialogue

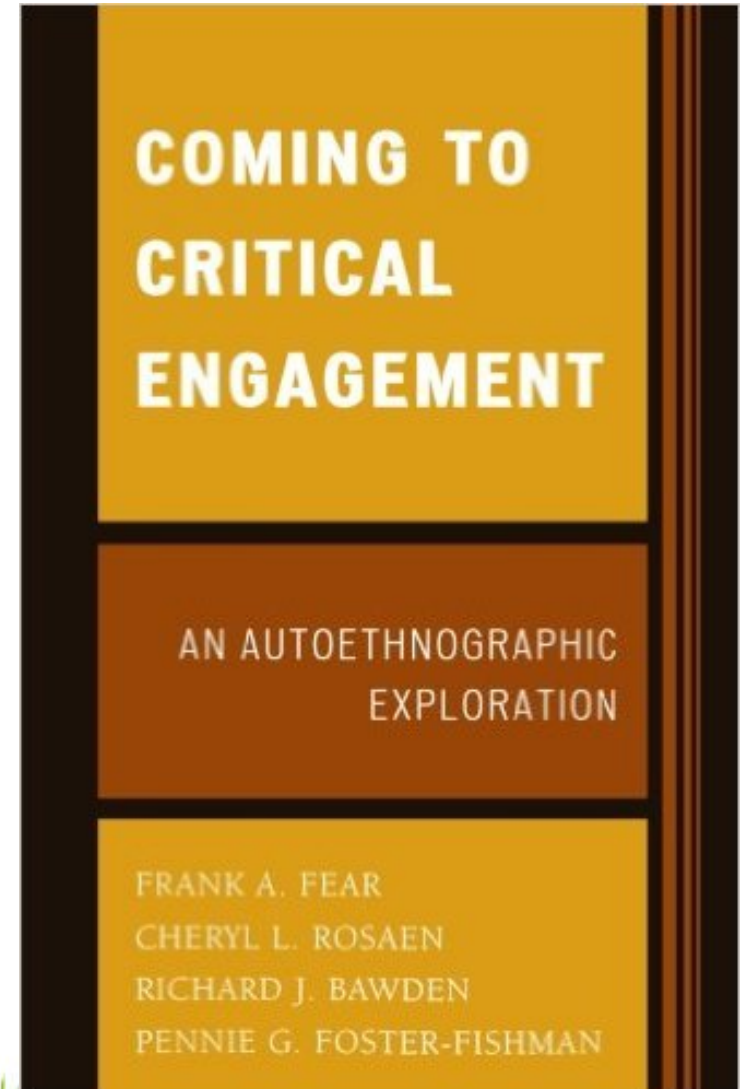


# Engagement-Dr. Frank Fear



**Dr. Frank Fear, Professor Emeritus  
Michigan State University,  
engagement author; Kellogg  
consultant**

Amazon \$49.88



<http://www.amazon.com/Coming-Critical-Engagement-Autoethnographic-Exploration/dp/0761834710>

<https://www.laprogressive.com/author/frank-a-fear/>  
<https://www.amazon.com/Coming-Critical-Engagement-Autoethnographic-Exploration/dp/0761834710>

# Engagement

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- ...“Grounded in an ethos of **mutuality, respectfulness, and stewardship**, proceeding through dialogue, and fostering inclusive well being.”
- Engagement is a way of being- both on campus and off-energized by the norms of engagement.
- Framed this way, engagement becomes a leadership and management practice.--*Dr. Frank Fear*

# Engagement

- “Engaged learning is an approach, an expression of being, a leadership ethic, and a way for scholars, practitioners, and administrators to connect otherwise diverse activities thematically, coherently, and meaningfully.”

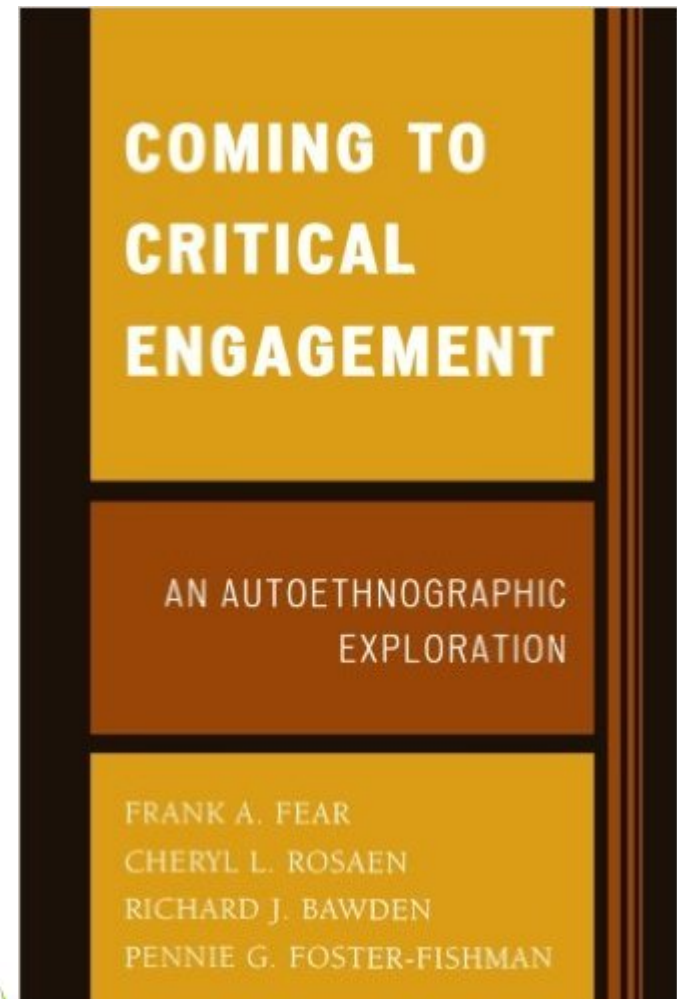
» -Frank Fear et al., 2002. *A Model of Engaged Learning: Frames of Reference and Scholarly Underpinnings*. Outreach Scholarship Conference

# Engagement

- Be a learner in your group rather than an **expert** Fear, F., et al. (2002). Experiencing engagement: **Stories from the field**. *Journal of Higher Education Outreach and Engagement*, 8(1), 59-74.
- If you are accomplished in a discipline or area consider yourself a specialist instead of an **expert** (Denny, personal communications, 2006).
- Stay open to outcome, i.e. allow your mind to **be changed** (Arriens, A., workshop, 2004).

# Engagement

Dialogue is essential to successful engagement.



<http://www.amazon.com/Coming-Critical-Engagement-Autoethnographic-Exploration/dp/0761834710>



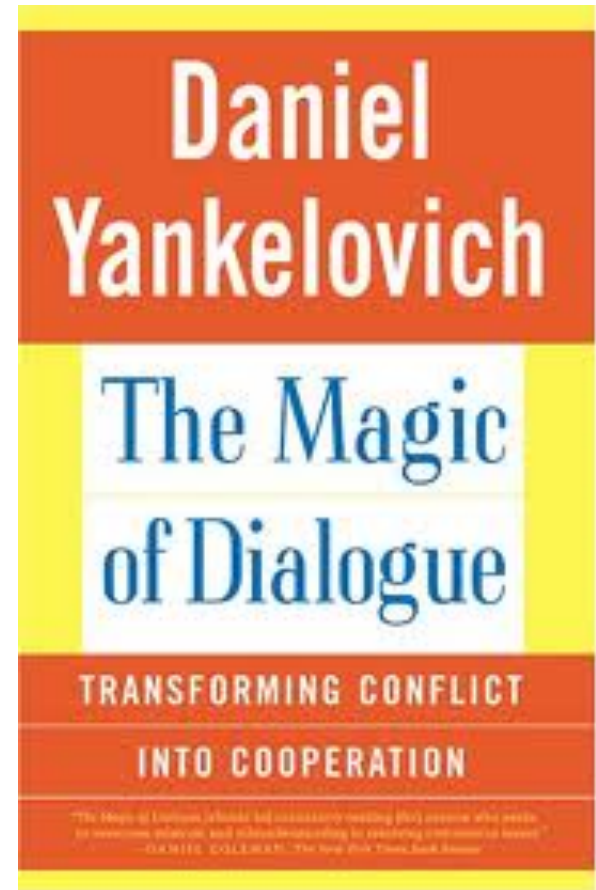
# Dialogue: Daniel Yankelovich

<http://www.strategy-business.com/media/image/05309.jpg>



**Daniel Yankelovich  
(1924-2017)**

- Graduate School of Arts and Sciences, Harvard University (Rantoul Fellow in Clinical Psychology); Director, UCSD Civic Collaborative, University of California at San Diego
- Recipient, Common Ground Book of the Year Award (for *The Magic of Dialogue*), 1999
- Trustee for 11 major firms & Board of Director on 7 major corporations
- Chairman: The Public Agenda; DYG; Viewpoint Learning



[http://www.amazon.com/s/ref=nb\\_sb\\_noss\\_2?url=search-alias%3Dstripbooks&field-keywords=The+magic+of+dialogue](http://www.amazon.com/s/ref=nb_sb_noss_2?url=search-alias%3Dstripbooks&field-keywords=The+magic+of+dialogue)

Amazon \$15.99

# Dialogue: 3 core components

- Equality
- Empathetic listening
- Airing assumptions and not judging them (or the speaker)



Photo: Brian Zopf

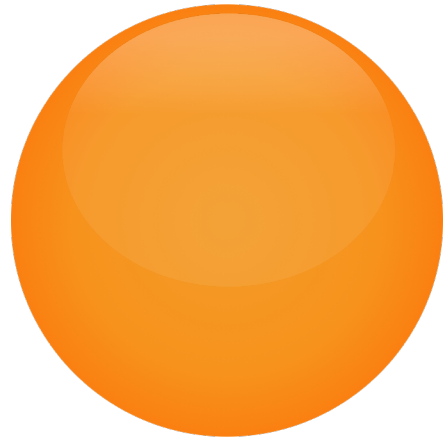
[http://www.google.com/imgres?imgurl=http://www.publicagenda.org/files/images/pages/Yankelovich\\_Claremont\\_110808.jpg](http://www.google.com/imgres?imgurl=http://www.publicagenda.org/files/images/pages/Yankelovich_Claremont_110808.jpg)

Yankelovich, D. (1999). *The Magic of Dialogue*, p. 46. New York: Schuster  
Video: Jan31, 2012 [https://www.youtube.com/watch?v=mgWUjBj\\_32s](https://www.youtube.com/watch?v=mgWUjBj_32s)



Community Garden Berkeley, CA

Photo by Ellen Vincent



# REAL PEOPLE IN THE CLASSROOM

To make critical thinking relevant

# Test 1 question #88

*“I am intrigued by listening to others, esp. those with experiential or authoritative influence such as Ricardo Urbina. Its interesting to see how they think/develop ideas.”*  
**(Architecture)**



Retired  
Federal  
Court Judge  
Ricardo  
Urbina

# Chimamanda Ngozi Adichie

## Chimamanda Ngozi Adichie

- Nigerian award winning author, educated at Yale
- [TED Talk: The danger of a single story \(18.49\)](#)
- Awarded MacArthur Genius Grant 2008
- [YouTube: Harvard 2018 Commencement Address](#)

<https://www.youtube.com/watch?v=hrAAEMFAG9E>



[Ehttps://www.ted.com/talks/chimamanda\\_adichie\\_the\\_danger\\_of\\_a\\_single\\_story?language=en](https://www.ted.com/talks/chimamanda_adichie_the_danger_of_a_single_story?language=en)

[https://pi.tedcdn.com/r/pet.tedcdn.com/images/ted/3527cd41287ab9d66473e112dbd339c6e515ef38\\_1600x1200.jpg?quality=89&w=800](https://pi.tedcdn.com/r/pet.tedcdn.com/images/ted/3527cd41287ab9d66473e112dbd339c6e515ef38_1600x1200.jpg?quality=89&w=800)

<http://2.bp.blogspot.com/-YznGKIfErV4/U4HQsluLVmI/AAAAAAAAEIIY/X1olwTpVfzk/s1600/adichie2.jpg>

# David Brooks

## David Brooks

- Op-Ed columnist NY Times
- Commentator on PBS NewsHour, NPR's "All Things Considered" and NBC's "Meet the Press."
- Award winning author
- Instructor at Yale
- *The Danger of a Single Story* NY Times (April 19, 2016)  
<https://www.nytimes.com/2016/04/19/opinion/the-danger-of-a-single-story.html>



# Daniel Yankelovich

## YouTube video:

- CEO Profile: Daniel Yankelovich  
Founder & Chairman Public  
Agenda

DYG, Inc. Viewpoint Learning, Inc  
Anaheim University (2012)

[https://www.youtube.com/watch?v=mgWUjBj\\_32s](https://www.youtube.com/watch?v=mgWUjBj_32s)



## YouTube video:

- Toward a More Just and Effective  
Democracy- Celebrating the Life  
and Work of Daniel Yankelovich

[PublicAgendaOnline](https://www.youtube.com/watch?v=RHpHREvHGM0) Mar 6, 2018

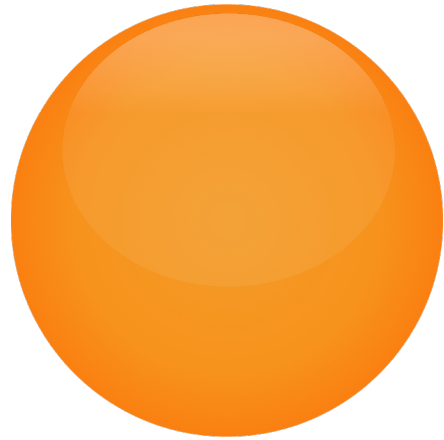
<https://www.youtube.com/watch?v=RHpHREvHGM0>



[https://www.google.com/search?q=daniel+yankelovich&rlz=1C1CHBF\\_enUS783US783&source=lnms&tbn=isch&sa=X&ved=0ahUKEwiH7Znsw5TcAhVjnuAKHZO3CTkQ\\_AUICygC&biw=901&bih=1087#imgrc=TM6Ukb7cWqiiFM](https://www.google.com/search?q=daniel+yankelovich&rlz=1C1CHBF_enUS783US783&source=lnms&tbn=isch&sa=X&ved=0ahUKEwiH7Znsw5TcAhVjnuAKHZO3CTkQ_AUICygC&biw=901&bih=1087#imgrc=TM6Ukb7cWqiiFM)

[https://www.google.com/search?q=daniel+yankelovich&rlz=1C1CHBF\\_enUS783US783&source=lnms&tbn=isch&sa=X&ved=0ahUKEwiH7Znsw5TcAhVjnuAKHZO3CTkQ\\_AUICygC&biw=901&bih=1087#imgrc=gS6E2lwWc7n7WM](https://www.google.com/search?q=daniel+yankelovich&rlz=1C1CHBF_enUS783US783&source=lnms&tbn=isch&sa=X&ved=0ahUKEwiH7Znsw5TcAhVjnuAKHZO3CTkQ_AUICygC&biw=901&bih=1087#imgrc=gS6E2lwWc7n7WM)





# EXIT SURVEY RESPONSES



# Exit survey student responses

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**What one belief/thought has changed or altered as a result of taking this class?**

- *“Listen to other people because they have opinions that matter.”* FORESTRY
- *“Being open to listen and plan with the landscape maintenance team during the planning stages.”* HORTICULTURE
- *“That all majors and disciplines are capable of working in a group and learning from each other.”* ANTHROPOLOGY

# Exit survey student responses

**What one belief/thought has changed or altered as a result of taking this class?**

- *“I have become more open to others’ opposing viewpoints on controversial topics.”*

AGRICULTURE EDUCATION

- *“I learned to be open-minded. I have learned to look at things from a different perspective than just my own. There are 2 or more sides to every story.”* TURFGRASS

# Exit survey student responses

---

**What one belief/thought has changed or altered as a result of taking this class?**

- *“I now use empathy when listening to other people’s viewpoints. I now look at a person’s viewpoint with a better understanding of how they feel about an issue.”* HORTICULTURE

# Exit survey student responses

---

**What one belief/thought has changed or altered as a result of taking this class?**

- *“Personally, my outlook to the overall design process has shifted to a more sustainable mindset. To get all parties involved in the design process from the beginning will save a lot of hassle on the back end of the install and maintenance.”* ARCHITECTURE

# Exit survey student responses

---

What one belief/thought has changed or altered as a result of taking this class?

- *“That I need to [take] into account other peoples thoughts and feelings more.”*  
TURFGRASS
- *“I take working in groups [to be] more intriguing and helpful. I get to see how others think.”* HORTICULTURE

## What one practice/behavior has changed or altered for you as a result of taking this class?

- *“The ability to think from more than one perspective.”* AGRICULTURAL MECHANIZATION
- *“I am a better critical thinker because of my ability to listen and fair mindedness I learned from this class.”* AGRICULTURAL EDUCATION

# Exit survey student responses

**What one practice/behavior has changed or altered for you as a result of taking this class?**

- *“Working in interdisciplinary groups is a relatively new concept for me. Throughout this class my openness to other viewpoints has changed during the duration of this class.”*

ARCHITECTURE

- *“Working in groups and being fair minded with everybody.”* HORTICULTURE



# Exit survey student responses

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**What one practice/behavior has changed or altered for you as a result of taking this class?**

- *“The ability to collaborate with multiple disciplines.”* ARCHITECTURE
- *“Group work”* MARKETING/MGT
- *“I will listen to everyone’s opinions with a more open mind.”* AG EDUCATION

## **Ellen Vincent, Ph.D.**

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<http://www.clemson.edu/cafls/demo/>



Photo by Craig Mehaffey